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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,894	04/06/2001	Koji Noguchi	35.G2768	3411

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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 08/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,894

Applicant(s)

NOGUCHI ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims 1 and 7 are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

In claims 1 and 7, the feature "the direction of uniaxial orientation of upper and lower substrates is either parallel or anti-parallel" is errors because of the direction of uniaxial orientation of liquid crystal molecules, not of upper and lower substrates.

Therefore, "the direction of uniaxial orientation of liquid crystal molecules on rubbing alignment layers formed on upper and substrates is either parallel or antiparallel" will be used for the prior art rejection. Moreover, "The direction of uniaxial orientation of liquid crystal molecules" also means the director of liquid crystal molecules.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

1. Claims 1, 5, 6, 8, 9 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaneko (US6141070A).

In regard to claims 1 and 8-9, Kaneko also further teaches in the third embodiment (Fig. 11, col. 16 lines 45-49) a liquid crystal device comprising

- two substrates 1 and 4;
- nematic liquid crystal 7 sandwiched between said substrates;

wherein the twisted angle of zero degrees (parallel) or of 180 degrees (anti-parallel) (col. 1, lines 39-43 in the background of invention), therefore, the direction of uniaxial orientation (or nematic director) on upper and lower substrates is either parallel

or anti-parallel; the zero-twisted nematic type device is also called an Electrically Controlled Birefringence (ECB) type device according to claim 9.

wherein temperature change of the retardation value of said liquid crystal device is reduced by changing the orientation state of liquid crystal molecules so as to compensate for change in the birefringence of said liquid crystal composition due to changes in temperature (col. 11 lines 43-45).

In regard to claims 5, 6 and 18, a liquid crystal device using a normally-white mode with no voltage (this is Normal-White display), wherein the high-voltage side (voltage applied) of the driving voltage is used as black, thereby black is displayed by performing phase compensation between liquid crystal layer and retardation layers according to claim 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-4, 12-17, 19- 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (US6141070A) as applied to claims 1, 5 and 6 above, in view of Yamada et al. (US6344883B2).

Kaneko teaches (Fig. 3 col. 11 lines 4-8) that for performing the sharpness of the liquid crystal, the liquid crystal device is Active Matrix drive LCD device, which conventionally includes the switches devices (TFT) for driving according to claim 12.

However, Kaneko fails to disclose the orientation of said upper and lower substrates is provided by an organic orientated film having a vertical or high pre-tilt angle, providing uniaxiality (claim 3).

Yamada et al. teach (in abstract, col. 1 lines 9-11 and col. 18 lines 1-2) a liquid crystal device, wherein the orientation of said upper and lower substrates is provided by an organic orientated film having a vertical or high pre-tilt angle, providing uniaxiality for wide viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal device as Kaneko disclosed with the orientation of said upper and lower substrates is provided by an organic orientated film having a vertical or high pre-tilt angle, providing uniaxiality for wide viewing angle.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (US6141070A) as applied to claim 1.

Kaneko also teaches (Fig. 3 col. 11 lines 4-8) that for performing the sharpness of the liquid crystal, the liquid crystal device is Active Matrix drive LCD device, which conventionally includes array of plurality of pixel electrodes that generates liquid crystal devices with each pixel electrode and switches devices (TFT) for driving.

4. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (US6141070A) as applied to claims 1, in view of Matsumoto et al. (US6078375A).

Matsumoto et al. disclose as conventional art (col. 1 line 67 to col. 2 line 6) a liquid crystal device, wherein the liquid crystal is splay orientation type for wide view angle and high contrast.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Kaneko disclosed with the liquid crystal of splay orientation type for wide view angle and high contrast.

5. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (US6141070A) as applied to claims 1, in view of Okada et al. (US6221444B1).

Okada et al. teach (in abstract) a liquid crystal device, wherein the liquid crystal is bend orientation type for driving at high speed.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Kaneko disclosed with the liquid crystal of bend orientation type for driving at high speed.

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not anticipate obvious to one ordinary skill in the art of a liquid crystal display device, with the combination of

- The refractive index anisotropy of liquid crystal composition having the nematic liquid crystal as the primary component at 30°C is 0.150 or more;
- The pre-tilt angle of liquid crystal molecule at 30°C is in a range of 10° to 45° at the substrate interfaces.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Masahito et al. (US6295110 B1) disclose nematic liquid crystal composition was sealed between both substrates, which is positive, dielectric constant anisotropy of 7.3 and refractive index anisotropy of 0.074 (wavelength of 589 nm at 20°C).

Wada et al. (US5337174A) disclose an optical compensator providing liquid crystal display for improving display coloration and contrast ratio.

Komatsu (US6342937 B1) teaches liquid crystal display device with positive liquid crystal (such as ZGS 5025 having refractive index anisotropy of 0.067. At this

Art Unit: 2871

time, the pre-tilt angle of the aligned liquid crystal molecules is about 4.8 degrees, and the retardation value is about 0.41.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8178 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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August 22, 2002


TOANTON
PRIMARY EXAMINER